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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOK. NO.	CONFIRMATION NO.
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09/870,482

06/01/2001

Robert W. Green IV

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06/03/2004

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EXAMINER

MCLENDON, SANZA L

ART UNIT

PAPER NUMBER

1711

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/870,482

Applicant(s)

GREER, ROBERT W.

Examiner

Sanza L. McClendon

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
 Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(c).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-9, 12-19, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 10, 11 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 1 and 6/2001.
- 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

DETAILED ACTION

*Election/Restrictions*

1. Claims 1-3 and 22 (Group I) are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention of Group II, there being no allowable generic or linking claim. Election was made **without** traverse in Paper received March 02, 2004. Claim 22 is being rejoined with applicants elected claims 4-21 at the examiners discretion, therefore claims 4-22 will be pending.

*Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 4 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Lin et al (WO 01/09053).

Lin et al teaches radiation curable optical fiber coating compositions with simultaneous color formation during cure. Said compositions comprise a dye or dye precursor, wherein said dye and/or dye precursor can be a reactive dye, said dye can be itself UV curable and becomes covalently bonded in the cured polymeric composition, which reduces dye migration in the cured, finished coating composition—page 32. Per example 12, Lin et al teaches preparing a linking compound having isocyanate functionality and acrylate functionality, which is then reacted with a dye having hydroxyl groups. While examiner assets that the process taught by Lin et al differs from the instantly claimed process of claim 4, the examiner deems that the product are the same in the absence of evidence and/or convincing arguments to the contrary. Thus the colored oligomer taught by Lin et al is deemed to anticipate the colored oligomer of the instant claim 4.

In addition, Lin et al teaches Per example 13 adding said colored urethane oligomer of claim 12 to a radiation curable composition comprising a urethane acrylate oligomer, an acrylated diluent, and a photoinitiator. Said coatings were drawn down on glass and cured using ultraviolet radiation to prepare a coated optical fiber. Therefore the examiner deems claims 12-14 are anticipated by the reference also.

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al (WO 01/09053).

Lin et al teaches radiation curable optical fiber coating compositions with simultaneous color formation during cure. Said compositions comprise a dye or dye precursor, wherein said dye and/or dye precursor can be a reactive dye, said dye can be itself UV curable and becomes covalently bonded in the cured polymeric composition, which reduces dye migration in the cured, finished coating composition—see page 32. Lin et al teaches said dye or dye precursors can have a reactive functionality that is not part of the chromophore, or which can be chemically modified to include reactive functionality without adversely effecting the chromophore an be used to form the reactive dyes or dye precursors, wherein the reactive dye functionality can be those listed on page 33, wherein carbamate is taught. Lin et al teaches a dye or dye precursors that have a reactive functionality (such as carbamate) that is not part of the chromophore, or which can be chemically modified to include reactive functionality without adversely effecting the chromophore can be then reacted with a linking compound, which includes radiation curable

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functionality—see page 33. Said linking compound desirably comprises a radiation curable functionality and a second functionality capable of reacting with the reactive functionality of the dye or dye precursor. Per example 12, Lin et al teaches preparing a linking compound having isocyanate functionality and acrylate functionality, which is then reacted with a dye having hydroxyl groups.

Lin et al does not expressly teach reacting an isocyanate end capped oligomer that is the reaction product of (c) and (d) as defined in instant claim 4, nor reacting said reaction product with (b) as defined by the instant claim 4.

However, Lin et al teaches chemically modifying a dye or dye precursor to include reactive functionality, such as carbamate functionality, and then reacting said modified reactive dye or dye precursor with a linking compound comprising radiation curable functionality and a second functionality that is reactive with the reactive functionality of the reactive dye or dye precursor. Therefore it would have been obvious to a ordinarily skilled artisan using the teachings of Lin et al to chemically modify a reactive dye or dye precursor, such as the one in example 12 Reactint Red X64, with the isocyanate compound (isophorane diisocyanate) first to provide carbamate functionality (NCO) and then reacting said carbamate functional dye or dye precursor with a linking compound having radiation curable functional groups and a second reactive functional group, such as the hydroxyethyl acrylate, reactive with said carbamate of the dye or dye precursor to form a colored polyurethane oligomer. The motivation would have been a reasonable expectation of successfully obtaining a chemically reactive dye or dye precursor that is itself is radiation curable and thus allowing for it to be chemically bonded in the colored, cured optical fiber coating in the absence of unexpected results and/or convincing arguments to the contrary.

6. Claims 4-9, 12-19 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al (6,630,242) in view of Rekers et al (EP 0 348 024 and US 4,846,846). Note: The text from Rekers et al in the below rejection is from EP 0348 024. In addition, the limitations " for providing color to a coating on a communications element" , " for forming a colored, cured coating on an optical fiber" , and " for providing color to a coating on an optical fiber" in claim 4, 13, 15, and 21 are being interpreted as future intended used of said colored oligomer and have been given no patentable weight at this time as written.

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Lin et al does not expressly teach using an anthraquinone dye for preparation the reactive dye or dye precursors. However, Lin et al teaches chemically modifying a dye or dye precursor to include reactive functionality, such as carbamate functionality, and then reacting said modified reactive dye or dye precursor with a linking compound comprising radiation curable functionality and a second functionality that is reactive with the reactive functionality of the reactive dye or dye precursor.

Rekers et al teaches preparing polyurethane resins colored with anthraquinone colorants and products. Said process for coloring polyurethane resins can be made by polyaddition reaction of a polyol and an isocyanate, which comprises adding to the reaction mixture, before or during the polyaddition reaction, a reactive coloring agent having the general formula found in the abstract. Said formula is an anthraquinone comprising two isocyanate reactive groups (Z and Z'). Said general formula reads on the formula of claim 7 and when a is 4, Y is ethylene oxide, b is 1 and Z is - OH. The preferred compound taught by Reckers et al is formula (II) on page 4, which anticipates claim 8. Reckers et al teaches in the preparation of polyurethane resins the colorant can be added to the polyol or even, in some instances, to the polyisocyanate component of the reaction mixture either before or during the polyurethane formation.

Lin et al and Reckers et al are analogous art that is the art of colored polyurethane dyes or dye precursors.

Therefore it would have been obvious to an artisan or ordinary skill level at the time of the invention to chemically modified an anthraquinone dye by chemically modifying said dye with a polyisocyanate, as taught by Rekers et al and Lin et al, to obtain an intermediate isocyanate capped anthraquinone dye and then reacting said dye with a linking compound having both radiation curable functionality and isocyanate reactive functionality, as taught by Lin et al, to obtain a reactive anthraquinone dye or dye precursor that can be chemically bonded to a cured optical fiber coating as suggested by Lin et al. The combination of references renders claims 4-9 12, 15-19, and 21-22 obvious in view of the prior art.

*Allowable Subject Matter*

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7. Claims 10-11 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach using the anthraquinone dyes as found in claims 10-11 and 20 in preparation of colored oligomers.

### *Conclusion*

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent No. 5,710,193 to Wade et al teaches reacting dye precursors with polyethylenically unsaturated mono-isocyanate compounds to produce colored urethane oligomers, wherein anthraquinone dyes (see formula 7) are taught. US Patent 6,630,242 to Lin et al is being cited as the US equivalent to WO 01/09053.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Sanza L McClendon

Examiner

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